

CLAIMS

1. An electric machine comprising:

a stator including a stator core having a generally cylindrical surface disposed between first and second ends;

5 a rotor adapted to magnetically interact with the stator, the rotor rotating about an axis;

a first intermediate portion partially covering the generally cylindrical surface of the stator;

a first end cap coupled to the first intermediate portion;

10 a second intermediate portion partially covering the generally cylindrical surface of the stator and being spaced from the first intermediate portion;

a second end cap coupled to the second intermediate portion; and

a fastener coupling at least one of the first and second intermediate portions and the first and second end caps.

15 2. The electric machine of claim 1 wherein the first intermediate portion includes a first distal edge spaced from the first end of the stator, and the second intermediate portion includes a second distal edge spaced from the second end of the stator, wherein the first end cap is coupled to the first distal edge and the second end cap is coupled to the second distal edge.

20 3. The electric machine of claim 1 wherein each of the first and second intermediate portions are generally cylindrical.

4. The electric machine of claim 1 wherein at least one of the first and second intermediate portions include a tab.

5. The electric machine of claim 4 wherein the at least one of the first and second intermediate portions include an aperture.

6. The electric machine of claim 5 wherein the aperture is disposed adjacent to the tab.

7. The electric machine of claim 6 wherein the tab is disposed adjacent to one of the ends of the stator.

5 8. The electric machine of claim 5 wherein the tab is formed by punching the at least one of the first and second intermediate portions to create the aperture.

9. The electric machine of claim 4 wherein the tab includes an aperture.

10 10. The electric machine of claim 9 wherein the electric machine further includes a fastener to couple the first and second end caps, and wherein the fastener is disposed within the aperture.

11. The electric machine of claim 10 wherein the core includes a bore, and wherein the fastener is disposed within the bore of the core.

15 12. The electric machine assembly of claim 1 wherein the support member comprises an exterior strap connecting the first intermediate portion and the second intermediate portion.

13. The electric machine assembly of claim 1 wherein the support member spaces the first intermediate portion from the second intermediate portion to expose the stator.

14. An electric machine assembly comprising:

a stator including a stator core, the stator core including first and second ends and a generally cylindrical surface between the first and second ends;

a rotor adapted to magnetically interact with the stator, the rotor rotating about an axis;

a first housing portion partially covering the generally cylindrical surface of the stator, the first housing portion including a first tab disposed adjacent to the first end of the stator;

a second housing portion partially covering the generally cylindrical surface of the stator, the second housing portion including a second tab disposed adjacent to the second end of the stator; and

a fastener coupling the first and second housing portions.

15. The electric machine assembly of claim 14 wherein the machine further comprises a first end cap coupled to the first housing portion and a second end cap coupled to the second housing portion and wherein the fastener couples the first and second end caps.

16. The electric machine of claim 15 wherein the first housing portion includes a first distal edge spaced from the first housing portion of the stator, and the second housing portion includes a second distal edge spaced from the second housing portion of the stator, and wherein the first end cap is coupled to the first distal edge and the second end cap is coupled to the second distal edge.

17. The electric machine of claim 14 wherein the at least one of the housing portion includes an aperture.

18. The electric machine of claim 17 wherein the aperture is disposed adjacent to the first tab.

19. The electric machine of claim 18 wherein the tab is disposed adjacent to one of the ends of the stator.

20. The electric machine of claim 14 wherein the tab is formed by punching the first housing portion to create the aperture.

5 21. The electric machine of claim 14 wherein the tab includes an aperture.

22. The electric machine of claim 14 wherein each of the first and second housing portions are generally cylindrical.

10 23. The electric machine assembly of claim 14 wherein the stator comprises at least one bore, and wherein the electric machine further comprises fasteners coupling the housing portions via the bore.

24. The electric machine assembly of claim 23 wherein the first tab comprises a connecting tab.

25. The electric machine assembly of claim 14 wherein the first tab comprises a positioning tab abutting against the stator.

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26. A method of assembling an electric machine, the method comprising:

providing a stator including a stator core, the stator core including first and second ends and a generally cylindrical surface between the first and second ends;

fitting a first housing portion over the stator, the first housing portion
5 including a first tab, the first fitting act including partially covering the generally cylindrical surface with the first housing portion and disposing the first tab adjacent to the first end of the stator;

fitting a second housing portion over the stator, the second housing portion
10 including a second tab, the second fitting act including partially covering the generally cylindrical surface with the second housing portion and disposing the second tab adjacent to the second end of the stator; and

coupling the first and second housing portions.

27. The method of claim 26 and further comprising disposing a first end cap
15 adjacent to the first housing portion, and disposing a second end cap adjacent to the second housing portion.

28. The method of claim 27 wherein coupling the first and second housing portions results from coupling the first and second end caps with a fastener.

29. The method of claim 26 and further comprising abutting the tab against the stator.

20 30. The method of claim 26 and further comprising punching a first aperture to create the first tab.

31. The method of claim 30 and further comprising punching a second aperture adjacent to create the second tab.

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32. A method of assembling an electric machine, the method comprising:

providing a stator including a stator core, the stator core including first and second ends and a generally cylindrical surface between the first and second ends;

5 fitting a first intermediate portion over the stator, the first intermediary portion including a first tab, the first fitting act including partially covering the generally cylindrical surface with the first intermediate portion and disposing the first tab adjacent to the first end of the stator;

10 fitting a second intermediate portion over the stator, the second intermediate portion including a second tab, the second fitting act including partially covering the generally cylindrical surface with the second intermediate portion and disposing the second tab adjacent to the second end of the stator;

disposing a first end-cap adjacent to the first intermediate portion;

disposing a second end-cap adjacent to the second intermediate portion; and

coupling the first and second end caps.

15 33. The method of claim 32 and further comprising punching a first aperture to create the first tab.

34. The method of claim 33 and further comprising punching a second aperture adjacent to create the second tab.